

1 **In the Claims**

2 Claim 28 has been amended.

3 Claims 1-8, 13-67 and 70-75 remain in the application and are listed below:

4
5 1. (Previously Presented) An editing system comprising:

6 a switch assembly comprising one or more software-implemented matrix
7 switches, individual matrix switches comprising:

8 one or more input pins configured to receive a data stream; and

9 one or more output pins configured to output a data stream;

10 the one or more input pins being routable to the one or more output pins,
11 the switch assembly being configured to process both compressed and
12 uncompressed data streams to provide a compressed output data stream that
13 represents a user-defined editing project in which a user can construct said editing
14 project by operating on one or more sources of multimedia content that provide
15 said data streams, wherein at least one of said matrix switches comprises a
16 scalable plurality of input pins and a scalable plurality of output pins, wherein
17 individual input pins of said scalable plurality of input pins can be iteratively
18 coupled to individual output pins of said scalable plurality of output pins based, at
19 least in part, on the user's operation on said one or more sources of multimedia
20 content.

21
22 2. (Original) The editing system of claim 1, wherein the switch
23 assembly comprises multiple switches.

1 3. (Original) The editing system of claim 2, wherein one switch is
2 configured to process compressed data streams.

3
4 4. (Original) The editing system of claim 2, wherein one switch is
5 configured to process uncompressed data streams.

6
7 5. (Original) The editing system of claim 2, wherein one switch is
8 configured to process compressed data streams, and one switch is configured to
9 process uncompressed data streams.

10
11 6. (Original) One or more computer-readable media having computer-
12 readable instructions thereon which, when executed by a computer, provide the
13 editing system of claim 1.

14
15 7. (Original) The editing system of claim 1 configured as a multi-media
16 editing system.

17
18 8. (Previously Presented) An editing system comprising:
19 a media processing object comprising at least one software-implemented
20 matrix switch comprising a scalable plurality of input pins and a scalable plurality
21 of output pins, wherein individual input pins of said scalable plurality of input pins
22 can be iteratively coupled to individual output pins of said scalable plurality of
23 output pins based, at least in part, on a user's operation on one or more sources of
24 multimedia content, wherein said media processing object is configured to:
25

1 receive multiple data streams comprising compressed and
2 uncompressed data streams; and

3 process the one or more data streams to provide a compressed output
4 data stream that represents a user-defined media project in which a user can
5 construct the media project by operating on one or more sources of multimedia
6 content.

7
8 9. (Canceled).

9
10 10. (Canceled).

11
12 11. (Canceled).

13
14 12. (Canceled).

15
16 13. (Previously Presented) A multi-media editing system comprising:
17 a switch assembly comprising one or more software-implemented matrix
18 switches, individual matrix switches comprising:

19 one or more input pins configured to receive a data stream; and

20 one or more output pins configured to output a data stream;

21 the one or more input pins being routable to the one or more output pins,
22 the switch assembly being configured to process both compressed and
23 uncompressed data streams to provide a compressed output data stream that
24 represents a user-defined multi-media editing project in which a user can construct
25

1 the multi-media editing project by operating on one or more sources of multimedia
2 content that provide said data streams; and

3 one or more data structures associated with the switch assembly and
4 configured for use in programming the switch assembly to provide a routing
5 scheme for routing input pins to output pins for a given multi-media editing
6 project time line,

7 wherein at least one of said matrix switches comprises a scalable plurality
8 of input pins and a scalable plurality of output pins, wherein individual input pins
9 of said scalable plurality of input pins can be iteratively coupled to individual
10 output pins of said scalable plurality of output pins based, at least in part, on the
11 user's operation on said one or more sources of multimedia content.

12
13 14. (Original) The multi-media editing system of claim 13, wherein the
14 one or more data structures comprise one or more grid structures, individual grid
15 structures being configured to contain data that defines an association between
16 input and output pins for the project time line.

17
18 15. (Original) The multi-media editing system of claim 13, wherein the
19 switch assembly comprises multiple switches.

20
21 16. (Original) The multi-media editing system of claim 15, wherein the
22 one or more data structures comprise a data structure associated with at least some
23 of the multiple switches.
24
25

17. (Original) The multi-media editing system of claim 16, wherein the data structures comprise grid structures that contain data that defines an association between input and output pins for the project time line.

18. (Original) The multi-media editing system of claim 15, wherein one switch is configured to process compressed data streams, and another switch is configured to process uncompressed data streams.

19. (Original) The multi-media editing system of claim 18, wherein the one or more data structures comprise data structures associated with the switches that are configured to process the compressed and uncompressed data streams.

20. (Original) The multi-media editing system of claim 19, wherein the data structures comprise grid structures that contain data that defines an association between each switch's input and output pins for the project time line.

21. (Previously Presented) A multi-media editing system comprising:
a switch assembly comprising one or more non-hardware matrix switches,
individual matrix switches comprising:

one or more input pins configured to receive a data stream; and

one or more output pins configured to output a data stream;

the one or more input pins being routable to the one or more output pins,
the switch assembly being configured to process both compressed and uncompressed data streams to provide a compressed output data stream that represents a user-defined multi-media editing project in which a user can construct

1 said editing project by operating on one or more sources of multimedia content
2 that provide said data streams, wherein at least one of said matrix switches
3 comprises a scalable plurality of input pins and a scalable plurality of output pins,
4 wherein individual input pins of said scalable plurality of input pins can be
5 iteratively coupled to individual output pins of said scalable plurality of output
6 pins based, at least in part, on the user's operation on said one or more sources of
7 multimedia content.

8
9 22. (Original) The multi-media editing system of claim 21, wherein the
10 switch assembly comprises multiple switches.

11
12 23. (Original) The multi-media editing system of claim 22, wherein one
13 switch is configured to process compressed data streams.

14
15 24. (Original) The multi-media editing system of claim 22, wherein one
16 switch is configured to process uncompressed data streams.

17
18 25. (Original) The multi-media editing system of claim 22, wherein one
19 switch is configured to process compressed data streams, and another switch is
20 configured to process uncompressed data streams.

21
22 26. (Original) The multi-media editing system of claim 21 further
23 comprising one or more data structures associated with the switch assembly and
24 configured for use in programming the switch assembly to provide a routing
25

1 scheme for routing input pins to output pins for a given multi-media editing
2 project time line.

3
4 27. (Original) The multi-media editing system of claim 26, wherein the
5 one or more data structures comprise grid structures that contain data that defines
6 an association between input and output pins for the project time line.

7
8 28. (Currently Amended) A[[n]] media processing system comprising:
9 switch means for receiving compressed and uncompressed data streams
10 associated with sources that are to be incorporated into a user-defined editing
11 project in which a user can construct said editing project by operating on one or
12 more sources of multimedia content that provide said data streams, said switch
13 means processing the compressed and uncompressed data streams to provide a
14 single compressed output stream that represents the project; and

15 programming means associated with the switch means and configured to
16 program the switch means to provide the single compressed output stream,

17 wherein said switch means comprises at least one matrix switch comprising
18 a scalable plurality of input pins and a scalable plurality of output pins, wherein
19 individual input pins of said scalable plurality of input pins can be iteratively
20 coupled to individual output pins of said scalable plurality of output pins based, at
21 least in part, on the user's operation on said one or more sources of multimedia
22 content.

23
24 29. (Original) The multi-media editing system of claim 28, wherein the
25 switch means comprises:

1 first switch means for processing the uncompressed data stream to provide
2 an output uncompressed data stream;

3 second switch means for processing the compressed data stream to provide
4 an output compressed data stream; and

5 third switch means for processing the output uncompressed and compressed
6 data streams to provide the single compressed output stream.

7
8 30. (Original) The multi-media editing system of claim 28, wherein the
9 switch means comprises means for providing a data stream as a feedback data
10 stream that is processed by the switch means.

11
12 31. (Original) The multi-media editing system of claim 28, wherein the
13 switch means comprises switch means implemented in software.

14
15 32. (Original) The multi-media editing system of claim 28, wherein the
16 switch means comprises:

17 first software switch means for processing the uncompressed data stream to
18 provide an output uncompressed data stream;

19 second software switch means for processing the compressed data stream to
20 provide an output compressed data stream; and

21 third software switch means for processing the output uncompressed and
22 compressed data streams to provide the single compressed output stream.

23
24 33. (Previously Presented) A multi-media editing system comprising:
25

1 a first software-implemented matrix switch comprising one or more input
2 pins and one or more output pins, the one or more input pins being routable to the
3 one or more output pins, the first matrix switch being configured to process one or
4 more uncompressed data streams and output an uncompressed data stream;

5 a second software-implemented matrix switch comprising one or more
6 input pins and one or more output pins, the one or more input pins being routable
7 to the one or more output pins, the second matrix switch being configured to
8 process one or more compressed data streams and output a compressed data
9 stream; and

10 a third software-implemented matrix switch comprising multiple input pins
11 and multiple output pins, the input pins being routable to one or more output pins,
12 the third matrix switch being configured to receive an uncompressed data stream
13 from the first switch and a compressed data stream from the second switch and
14 process the received data streams to provide a single compressed output data
15 stream that represents a user-defined multi-media editing project in which a user
16 can construct said editing project by operating on one or more sources of
17 multimedia content that provide said data streams,

18 wherein at least one of said matrix switches comprises a scalable plurality
19 of input pins and a scalable plurality of output pins, wherein individual input pins
20 of said scalable plurality of input pins can be iteratively coupled to individual
21 output pins of said scalable plurality of output pins based, at least in part, on the
22 user's operation on said one or more sources of multimedia content.

23
24
25

1 34. (Original) The multi-media editing system of claim 33 further
2 comprising a software-implemented compressor element coupled with the third
3 switch and configured to receive and compress an uncompressed data stream.

4
5 35. (Original) The multi-media editing system of claim 34 further
6 comprising a feedback path between the compressor element and an input pin of
7 the third switch configured to provide a compressed data stream to the third
8 switch's input pin.

9
10 36. (Original) The multi-media editing system of claim 33, wherein the
11 third switch is programmed to receive, when available, a data stream from the
12 second switch and, when a data stream is unavailable from the second switch, seek
13 a data stream from the first switch.

14
15 37. (Original) One or more computer-readable having computer-
16 readable instructions thereon which, when executed by a computer, provide the
17 multi-media editing system of claim 33.

18
19 38. (Previously Presented) A multi-media editing system comprising:
20 first software switch means for processing one or more uncompressed data
21 streams to provide an uncompressed data stream, the switch means comprising at
22 least one feedback loop that modifies a data stream that is output by the switch
23 means and provides the modified data stream as an input to the switch means;

24 second software switch means for processing one or more compressed data
25 streams to provide a compressed data stream; and

1 a third software switch means for receiving an uncompressed data stream
2 from the first software switch means and a compressed data stream from the
3 second software switch and processing the received data streams to provide a
4 single compressed output data stream that represents a user-defined multi-media
5 editing project in which a user can construct said editing project by operating on
6 one or more sources of multimedia content that provide said data streams,

7 wherein at least one of said switch means comprises a scalable plurality of
8 input pins and a scalable plurality of output pins, wherein individual input pins of
9 said scalable plurality of input pins can be iteratively coupled to individual output
10 pins of said scalable plurality of output pins based, at least in part, on the user's
11 operation on said one or more sources of multimedia content.

12
13 39. (Original) The multi-media editing system of claim 38 further
14 comprising programming means associated with the first and second software
15 switch means for programming routing of data streams therethrough.

16
17 40. (Previously Presented) A multi-media editing system comprising:
18 a first software-implemented matrix switch comprising one or more input
19 pins and one or more output pins, the one or more input pins being routable to the
20 one or more output pins, the first matrix switch being configured to process one or
21 more uncompressed data streams and output an uncompressed data stream;

22 a second software-implemented matrix switch comprising one or more
23 input pins and one or more output pins, the one or more input pins being routable
24 to the one or more output pins, the second matrix switch being configured to
25

1 process one or more compressed data streams and output a compressed data
2 stream;

3 a third software-implemented matrix switch comprising multiple input pins
4 and multiple output pins, the input pins being routable to one or more output pins,
5 the third matrix switch being configured to receive an uncompressed data stream
6 from the first switch and a compressed data stream from the second switch and
7 process the received data streams to provide a single compressed output data
8 stream that represents a user-defined multi-media editing project in which a user
9 can construct said editing project by operating on one or more sources of
10 multimedia content that provide said data streams; and

11 one or more data structures associated with at least some of the matrix
12 switches and configured for use in programming the associated switches to
13 provide a routing scheme for routing input pins to output pins,

14 wherein at least one of said matrix switches comprises a scalable plurality
15 of input pins and a scalable plurality of output pins, wherein individual input pins
16 of said scalable plurality of input pins can be iteratively coupled to individual
17 output pins of said scalable plurality of output pins based, at least in part, on the
18 user's operation on said one or more sources of multimedia content.

19
20 41. (Original) The multi-media editing system of claim 40, wherein the
21 one or more data structures comprise one or more grid structures that contain data
22 that defines an association between input and output pins for a project time line.
23
24
25

1 42. (Original) The multi-media editing system of claim 40, wherein the
2 one or more data structures comprise multiple data structures, individual data
3 structures being associated with the first and second switches.

4
5 43. (Original) The multi-media editing system of claim 42, wherein the
6 data structures comprise grid structures each of which contains data that defines an
7 association between input and output pins of its associated switch for a project
8 time line.

9
10 44. (Previously Presented) A multi-media editing method comprising:
11 providing a switch assembly comprising one or more software-
12 implemented matrix switches, individual matrix switches comprising one or more
13 input pins and one or more output pins, the one or more input pins being routable
14 to the one or more output pins, the switch assembly being configured to process
15 both compressed and uncompressed data streams to provide a compressed output
16 data stream that represents a user-defined multi-media editing project in which a
17 user can construct said editing project by operating on one or more sources of
18 multimedia content that provide said data streams, wherein at least one of said
19 matrix switches comprises a scalable plurality of input pins and a scalable plurality
20 of output pins, wherein individual input pins of said scalable plurality of input pins
21 can be iteratively coupled to individual output pins of said scalable plurality of
22 output pins based, at least in part, on the user's operation on said one or more
23 sources of multimedia content; and
24
25

1 programming the switch assembly using one or more data structures, said
2 programming providing a routing scheme for routing input pins to output pins for
3 a given time period.

4
5 45. (Original) The multi-media editing method of claim 44, wherein said
6 providing comprises providing multiple switches at least one of which being
7 configured to process both compressed and uncompressed data streams.

8
9 46. (Original) The multi-media editing method of claim 44, wherein said
10 providing comprises providing multiple switches, one of which being configured
11 to process only compressed data streams.

12
13 47. (Original) The multi-media editing method of claim 44, wherein said
14 providing comprises providing multiple switches, one of which being configured
15 to process only uncompressed data streams.

16
17 48. (Original) The multi-media editing method of claim 44, wherein said
18 providing comprises providing multiple switches:

19 at least one of which being configured to process both compressed and
20 uncompressed data streams;

21 at least one of which being configured to process only compressed data
22 streams; and

23 at least one of which being configured to process only uncompressed data
24 streams.

1 49. (Original) The multi-media editing method of claim 44, wherein said
2 programming comprises programming the switch assembly using one or more grid
3 structures, individual grid structures containing data defining an association
4 between input pins, output pins, and a project time line.

5
6 50. (Original) The multi-media editing method of claim 44 further
7 comprising:

8 representing the editing project as a hierarchical tree structure; and
9 processing the hierarchical tree structure to provide at least one grid
10 structure containing data that defines an association between input pins, output
11 pins and a time line defined by the editing project.

12
13 51. (Original) The multi-media editing method of claim 44, wherein said
14 programming comprises:

15 defining a first grid structure containing data that defines an association
16 between input pins, at least one output pin and a time line defined by the editing
17 project; and

18 defining a second grid structure containing data that defines an association
19 between different input pins, at least one different output pin and the time line
20 defined by the editing project.

21
22 52. (Original) The multi-media editing method of claim 51, wherein the
23 first grid structure is associated with programming the switch assembly to process
24 the uncompressed data stream.
25

53. (Original) The multi-media editing method of claim 51, wherein the second grid structure is associated with programming the switch assembly to process the compressed data stream.

54. (Original) The multi-media editing method of claim 51, wherein said defining of the second grid structure comprises deriving the second grid structure from the first grid structure.

55. (Original) One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, implement the method of claim 44.

56. (Original) A multi-media editing application executable on one or more computers to implement the method of claim 44.

57. (Previously Presented) One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, cause the computer to:

provide a switch assembly comprising multiple software-implemented matrix switches, individual matrix switches comprising one or more input pins and one or more output pins, the one or more input pins being routable to the one or more output pins, the switch assembly comprising:

a first switch configured to process uncompressed data streams to provide an uncompressed output data stream;

1 a second switch configured to process compressed data streams to provide a
2 compressed output data stream; and

3 a third switch configured to receive both the uncompressed and compressed
4 output data streams and process the data streams to provide a compressed output
5 data stream that represents a user-defined multi-media editing project in which a
6 user can construct said editing project by operating on one or more sources of
7 multimedia content that provide said data streams, wherein at least one of said
8 matrix switches comprises a scalable plurality of input pins and a scalable plurality
9 of output pins, wherein individual input pins of said scalable plurality of input pins
10 can be iteratively coupled to individual output pins of said scalable plurality of
11 output pins based, at least in part, on the user's operation on said one or more
12 sources of multimedia content; and

13 program the switch assembly by defining a first grid structure containing
14 data that defines an association between the first switch's input pins, at least one
15 output pin and a time line defined by the editing project, and defining a second
16 grid structure containing data that defines an association between the second
17 switch's input pins, at least one output pin and the time line defined by the editing
18 project.

19
20 58. (Original) The computer-readable media of claim 57, wherein the
21 instructions cause the computer to derive the second grid structure from the first
22 grid structure.

23
24 59. (Original) The computer-readable media of claim 58, wherein the
25 instructions cause the computer to derive the second grid structure by:

1 determining whether any entries in the second grid structure are associated
2 with a data stream source that is not in a format that is the same as or compatible
3 with a format associated with the compressed output data stream that represents a
4 user-defined multi-media editing project; and

5 removing any entry that is not in the same or compatible format.

6
7 60. (Original) The computer-readable media of claim 59, wherein said
8 format is associated with a frame rate.

9
10 61. (Original) The computer-readable media of claim 59, wherein said
11 format is associated with a data rate.

12
13 62. (Original) The computer-readable media of claim 58, wherein the
14 instructions cause the computer to derive the second grid structure by:

15 copying the first grid structure;

16 evaluating the copied grid structure to ascertain entries associated with data
17 source streams that are modified in some way; and

18 removing any grid entries associated with data source streams that are
19 modified in some way.

20
21 63. (Previously Presented) A multi-media editing method comprising:
22 providing a first software-implemented matrix switch comprising one or
23 more input pins and one or more output pins, the one or more input pins being
24 routable to the one or more output pins, the first matrix switch being configured to
25

1 process one or more uncompressed data streams and output an uncompressed data
2 stream;

3 providing a second software-implemented matrix switch comprising one or
4 more input pins and one or more output pins, the one or more input pins being
5 routable to the one or more output pins, the second matrix switch being configured
6 to process one or more compressed data streams and output a compressed data
7 stream;

8 providing a third software-implemented matrix switch comprising multiple
9 input pins and multiple output pins, the input pins being routable to one or more
10 output pins wherein at least one of said matrix switches comprises a scalable
11 plurality of input pins and a scalable plurality of output pins, wherein individual
12 input pins of said scalable plurality of input pins can be iteratively coupled to
13 individual output pins of said scalable plurality of output pins based, at least in
14 part, on the user's operation on said one or more sources of multimedia content;

15 receiving, with the third matrix switch, an uncompressed data stream from
16 the first switch and a compressed data stream from the second switch; and

17 processing the received data streams with the third switch to provide a
18 single compressed output data stream that represents a user-defined multi-media
19 editing project in which a user can construct said editing project by operating on
20 one or more sources of multimedia content that provide said data streams.

21
22 64. (Original) The multi-media editing method of claim 63, wherein said
23 processing comprises:
24
25

1 compressing the uncompressed data stream received from the first switch
2 using a software-implemented compressor element coupled with the third switch;
3 and
4 routing the compressed data stream that was compressed by the compressor
5 element to an input pin of the third switch.
6

7 65. (Original) The multi-media editing method of claim 63 further
8 comprising receiving with the third switch, when available, a data stream from the
9 second switch and, when a data stream is unavailable from the second switch,
10 seeking with the third switch, a data stream from the first switch.
11

12 66. (Original) One or more computer-readable media having computer-
13 readable instructions thereon which, when executed by a computer, implement the
14 method of claim 63.
15

16 67. (Previously Presented) One or more computer-readable media
17 having computer-readable instructions thereon which, when executed by a
18 computer, cause the computer to:

19 process at least one compressed data stream to provide an output
20 compressed data stream that comprises a portion of a user-defined multi-media
21 editing project that is associated with a data stream source;

22 process one or more uncompressed data streams to manipulate the one or
23 more uncompressed data streams to provide an output uncompressed data stream
24 that comprises a different portion of a user-defined multi-media editing project
25 that is associated with one or more data stream sources;

1 compress the output uncompressed data stream; and
2 associate the output compressed data stream and the compressed output
3 uncompressed data stream together to provide a compressed stream that represents
4 a user-defined multi-media editing project in which a user can construct said
5 editing project by operating on one or more sources of multimedia content that
6 provide said data streams,

7 wherein said data streams are processed utilizing at least one matrix
8 switches comprising a scalable plurality of input pins and a scalable plurality of
9 output pins, wherein individual input pins of said scalable plurality of input pins
10 can be iteratively coupled to individual output pins of said scalable plurality of
11 output pins based, at least in part, on the user's operation on said one or more
12 sources of multimedia content.

13
14 68. (Canceled).

15
16 69. (Canceled).

17
18 70. (Previously Presented) One or more computer-readable media
19 having computer-readable instructions thereon which, when executed by a
20 computer, cause the computer to:

21 receive and process one or more uncompressed data streams with a first
22 software-implemented matrix switch comprising one or more input pins and one
23 or more output pins, the one or more input pins being routable to the one or more
24 output pins to output an uncompressed data stream;

1 receive and process one or more compressed data streams with a second
2 software-implemented matrix switch comprising one or more input pins and one
3 or more output pins, the one or more input pins being routable to the one or more
4 output pins to output a compressed data stream;

5 receive and process the uncompressed data stream that is output by the first
6 switch and the compressed data stream that is output by the second switch with a
7 third software-implemented matrix switch comprising multiple input pins
8 individual ones of which receive data streams, and one or more output pins
9 individual ones of which provide data streams, the one or more input pins being
10 routable to the one or more output pins to output, at one output pin, a compressed
11 data stream that represents a user-defined multi-media editing project in which a
12 user can construct said editing project by operating on one or more sources of
13 multimedia content that provide said data streams, wherein at least one of said
14 matrix switches comprises a scalable plurality of input pins and a scalable plurality
15 of output pins, wherein individual input pins of said scalable plurality of input pins
16 can be iteratively coupled to individual output pins of said scalable plurality of
17 output pins based, at least in part, on the user's operation on said one or more
18 sources of multimedia content.

19
20 71. (Original) The computer-readable media of claim 70, wherein the
21 instructions cause the computer to:

22 compress the uncompressed data stream output by the first switch using the
23 third switch; and
24
25

1 incorporate the compressed uncompressed data stream with the compressed
2 data stream that is output by the second switch to provide the compressed data
3 stream that represents the user-defined editing project.

4
5 72. (Original) The computer-readable media of claim 70, wherein the
6 instructions cause the computer to program the first and second switches using
7 first and second data structures respectively associated with the first and second
8 switches, each data structure providing a routing scheme for routing switch input
9 pins to switch output pins.

10
11 73. (Original) The computer-readable media of claim 72, wherein the
12 first and second data structures comprise grid structures that provide an
13 association between input pins, output pins and a time line defined by a user-
14 defined multi-media editing project.

15
16 74. (Original) The computer-readable media of claim 73, wherein the
17 instructions cause the computer to derive the second grid structure from the first
18 grid structure.

19
20 75. (Original) The computer-readable media of claim 74, wherein the
21 instructions cause the computer to derive the second grid structure by:

22 copying the first grid structure;
23 evaluating the copied grid structure to ascertain entries associated with data
24 source streams that are modified in some way; and
25

1 removing any grid entries associated with data source streams that are
2 modified in some way.
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25